# BAY AREA REGIONAL RAIL PLAN CONCEPTUAL ALTERNATIVES TASK

Technical Memorandum 3.a

Systemwide Study Alternatives



May 5, 2006



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#### STUDY ALTERNATIVE 1 Year 2050 Rail Network

(No High Speed Rail)

Passenger Rail Shared with Freight Capacity Improvements as Needed

**Existing Freight Operating Practices** 

BART Regional System Expansion New Transbay Tube and San Francisco Line

#### US 101 North Corridor (San Francisco - Cloverdale)

Improve 101 corridor service to support long term growth using passenger equipment mixed with freight service north of Ignacio Wye (Novato)

# I-80 Corridor (Oakland - Auburn)

Upgrade UPRR line to 3 or 4 tracks with grade separations and operational improvements for enhanced regional service operations with standard passenger equipment

Extend BART Richmond line to intercept station on I-80 north of Hercules

# North Bay Corridor (US 101 to I-80 across San Pablo Bay between Petaluma and Cordelia)

Operate Calistoga to Vallejo and San Rafael to Fairfield / Vacaville service via NWP and California Northern lines

Provide high frequency express bus connection across Richmond-San Rafael Bridge to connect between San Rafael 101 corridor service and Richmond BART

# Peninsula Corridor (San Francisco - San Jose)

Improve capacity to 2-4 tracks grade separated to support express and local services with electrified standard equipment; freight operates at night

New BART subway extension from new transbay tube via Transbay Transit Center and Union Square to Presidio Terminus

# <u>South Counties Corridor (San Jose – Santa Cruz / Monterey / Salinas)</u>

Extend commuter service operating with standard equipment to Salinas with provision for San Francisco to Monterey regional train

# East Bay Corridor (Oakland – San Jose)

Shared regional service with programmed capacity & operational improvements and additional capacity & operational improvements to support higher service levels; add local stops in East Bay: add grade separations

BART extension to Warm Springs & Santa Clara; new BART/regional services intermodal at Broadway along new transbay BART line

#### <u>Transbay Corridors (Oakland – San Francisco & Dumbarton)</u>

Relocate Jack London Square Amtrak station to provide intermodal with new BART transbay tube at Broadway

Construct 4th BART track through Oakland; split Bay Point service and extend to Jack London Square, Alameda and San Francisco via new tube and new San Francisco subway line; new BART transbay line has intermodal with relocated regional services at Broadway near Jack London Square and intermodal with Transbay Transit Center in San Francisco

Dumbarton service operates with standard consist between Peninsula and Union City

#### Central Valley (Sacramento - Fresno)

Improvements as necessary along BNSF and UPRR lines to accommodate growth in regional services and freight movements

# <u>Tri-Valley Corridor (I-580, I-680 & I-205 from East Bay to Tracy/Manteca)</u>

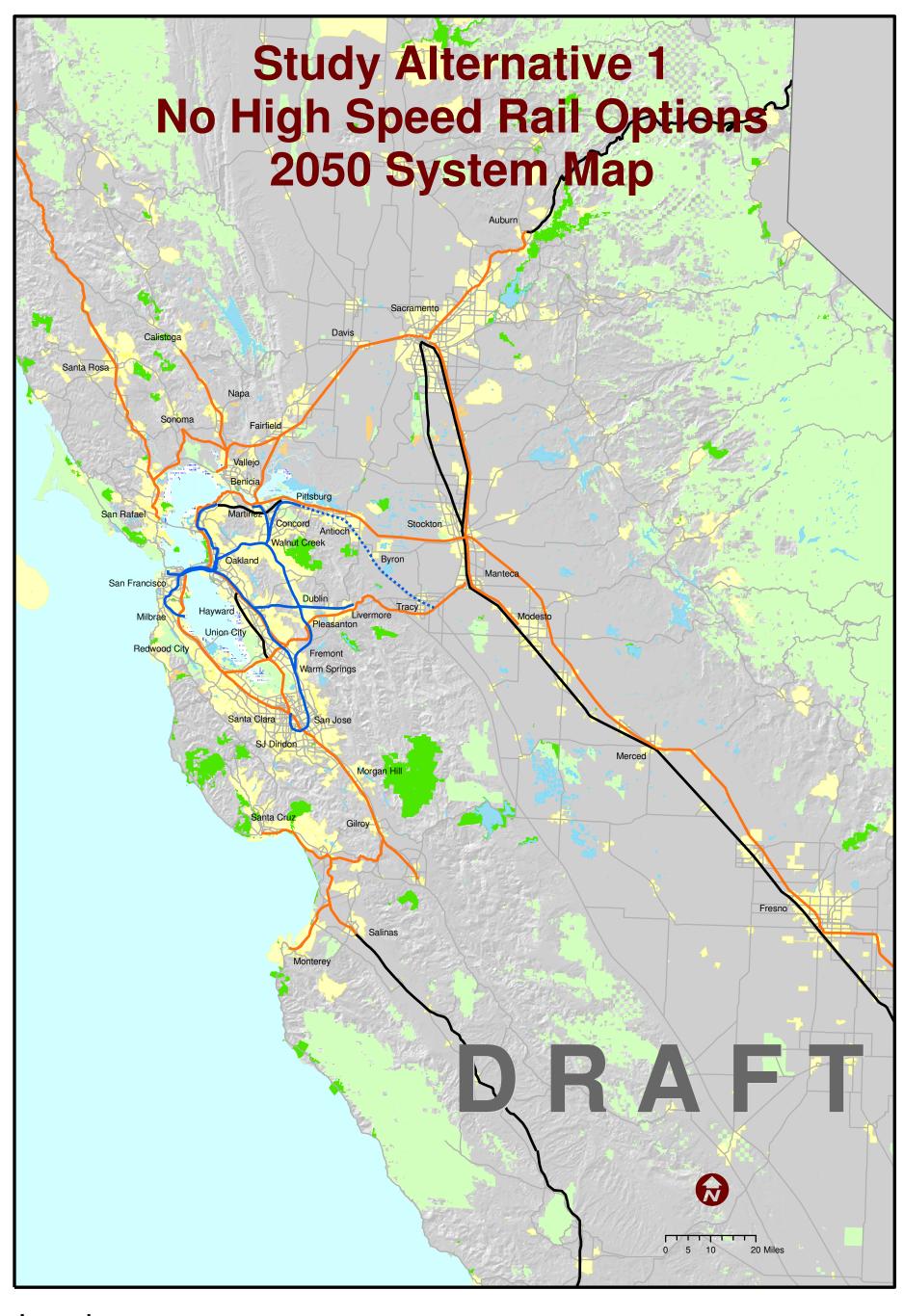
Upgrade UPRR route with capacity and operational improvements to provide higher speed service for regional trains to Central Valley; put SPRR alignment through Niles Canyon back in service and operate directionally between Niles Junction and Sunol; relocate Vasco Road station to provide new intermodal with BART at Greenville Road / I-580

Extend BART system along I-580 to intermodal at Greenville Road with new stop at Isabel

# <u>I-680 Corridor (Fairfield – San Jose & Tracy)</u>

Provide new BART line along I-680 from Warm Springs BART station to intermodal with Capitol Corridor at Martinez; transfer stations at West Dublin and Walnut Creek to existing BART Dublin/Pleasanton and Bay Point lines

Extend eBART service to connect with regional services at Tracy



Conservation Areas

- HSR only, light weight equipment, double track, fully grade separated
   Regional Passenger Rail, light weight, fully grade separated
   HSR with Regional Passenger Rail
- Freight/Regional Rail
- Predominantly freight, standard equipment

#### STUDY ALTERNATIVE 2 Year 2050 Rail Network

(No High Speed Rail)

Regional Passenger Rail System Separated from Freight Uses Lightweight Equipment

Freight Dispatching Optimized
Best Use of Capacity

BART Mass Transit Evolution Add Track for Express & New Local Stops

#### US 101 North Corridor (San Francisco - Cloverdale)

Improve 101 corridor service to support long term growth using passenger equipment mixed with freight service north of Ignacio Wye (Novato); provide high frequency express bus connection between San Rafael and Presidio Intermodal; develop new MUNI connection between Presidio Intermodal and Daly City BART via 19th Avenue

# I-80 Corridor (Oakland - Auburn)

Construct new higher speed passenger line for lightweight equipment from Oakland to vicinity of Martinez via UPRR; construct new bridge across Carquinez Strait (study corridor includes Crockett-Martinez-Pittsburg); develop separate passenger line along UPRR alignment to Sacramento

# North Bay Corridor (US 101 to I-80 across San Pablo Bay between Petaluma and Cordelia)

Operate Calistoga to Vallejo and San Rafael to Fairfield / Vacaville service via NWP and California Northern lines; extend I-80 corridor service across future replacement Richmond-San Rafael bridge to connect with Richmond BART

# Peninsula Corridor (San Francisco - San Jose)

Improve to 2-4 track grade separated electric system supporting express and local service between San Jose and Transbay Transit Center using lightweight electrified equipment; accommodation for night freight service using standard equipment

BART adds 30th Street stop and provides express & local service between SFO/Millbrae and downtown San Francisco

# <u>South Counties Corridor (San Jose – Santa Cruz / Monterey / Salinas)</u>

Extend lightweight separate passenger line along UPRR alignment from San Jose to Salinas; regional service using standard equipment is provided linking Santa Cruz, Monterey & Salinas with transfers at Pajaro & Castroville

# East Bay Corridor (Oakland - San Jose)

Shift passenger service to improved Oakland Subdivison between Oakland & Niles; Improve Centerville Line & Coast Subdivision Niles to San Jose; construct new passenger-only line via Caltrain – Trimble – I-880 alignment from Niles to San Jose; relocate JLS station to new West Oakland BART intermodal near 3rd/Peralta

BART extension to Warm Springs & Santa Clara; new East Bay BART stations with express & local service; BART/regional services intermodal at relocated West Oakland station near 3rd/Peralta

#### <u>Transbay Corridors (Oakland – San Francisco & Dumbarton)</u>

New transbay rail tunnel from Transbay Transit Center to Oakland; extend Peninsula express and local service w/ lightweight electric equipment to I-80 corridor; relocate Jack London Square station to new BART intermodal at relocated West Oakland BART station near 3rd/Peralta

Construct 4th BART track through Oakland; operate BART express and local services through existing transbay tube; realign BART to relocated West Oakland stop near 3rd/Peralta

Dumbarton service operates with lightweight electric on separate trackage through Centerville between Peninsula and East Bay

#### Central Valley (Sacramento – Fresno)

Develop separate passenger trackage along UPRR from Merced to Sacramento; make capacity improvements to BNSF and re-route freight traffic to optimize system capacity

# <u>Tri-Valley Corridor (I-580, I-680 & I-205 from East Bay to Tracy/Manteca)</u>

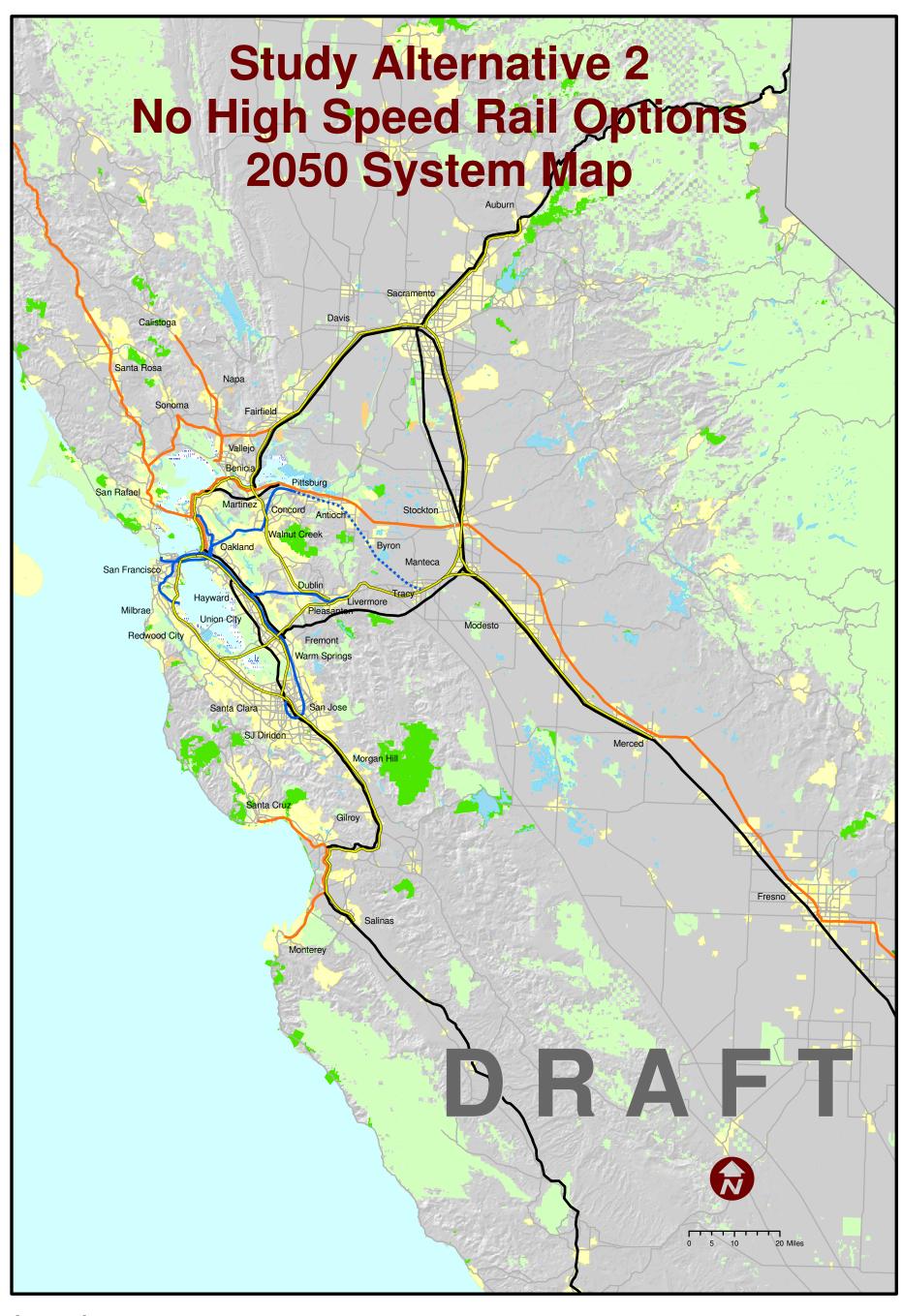
Construct freight by-pass from Sunol to Altamont Pass south of Livermore and Pleasanton and shift freight trains out of cities; construct new passenger line for lightweight equipment in tunnel from Niles Junction to Sunol; then along UPRR through Pleasanton and Livermore and along former SPRR over Altamont Pass to Tracy; expanded ACE services operate from Sacramento and Merced through the Tri-Valley corridor

Extend BART via El Chorro Road and UPRR alignment to downtown Livermore; add West Dublin and Isabel intermodal stops

# <u>I-680 Corridor (Fairfield – San Jose & Tracy)</u>

Operate branch line from new Isabel ACE/UPRR station to East Dublin / Pleasanton BART, Walnut Creek BART and Martinez Amtrak station via new alignment parallel to El Chorro Road, I-580 & I-680

Extend eBART service to connect with regional services at Tracy



Conservation Areas

- HSR only, light weight equipment, double track, fully grade separated
- Regional Passenger Rail, light weight, fully grade separated
- HSR with Regional Passenger Rail
- Freight/Regional Rail
- Predominantly freight, standard equipment
- BART

#### STUDY ALTERNATIVE 3 Year 2050 Rail Network

(No High Speed Rail)

Regional Passenger Rail System Corridor-Specific Treatments

Freight By-Pass Lines with Consolidated Dispatching Shift Freight Traffic away from City Centers

BART Core Capacity Improvements
Infrastructure and Vehicles

#### US 101 North Corridor (San Francisco - Cloverdale)

Improve 101 corridor service to support long term growth using passenger equipment mixed with freight service north of Ignacio Wye (Novato)

#### I-80 Corridor (Oakland – Auburn)

Upgrade regional service to 3 or 4 tracks; shift freight service to BNSF north of Richmond and construct by-pass for freight along former Sacramento Northern (Pittsburg - Sacramento); develop new freight by-pass line around Sacramento; use BNSF between Richmond and Port Chicago for freight by-pass

# North Bay Corridor (US 101 to I-80 across San Pablo Bay between Petaluma and Cordelia)

Operate Calistoga to Vallejo and San Rafael to Fairfield / Vacaville service via NWP and California Northern lines

# Peninsula Corridor (San Francisco – San Jose)

Improve capacity to 2-4 tracks grade separated to support express and local services with electrified standard equipment; freight operates at night

BART San Francisco station access improvements; other operational improvements as needed to improve core capacity

# <u>South Counties Corridor (San Jose – Santa Cruz / Monterey / Salinas)</u>

Extend commuter service using standard equipment from San Jose to Salinas with shuttle between Gilroy & Hollister; provide Santa Cruz to Monterey service with transfers at Pajaro and Castroville; provision for San Francisco to Monterey regional train

# East Bay Corridor (Oakland - San Jose)

Shift freight to Coast Subdivision Oakland to Newark; passenger service remains on Niles Subdivision north of Union City; improve Centerville line as needed to accommodate passenger & freight traffic

BART extension to Warm Springs & Santa Clara; construct 4th track through Oakland and split East Bay service from San Francisco service with cross-platform transfers at MacArthur and 12th Street; relocate station and track at West Oakland to intermodal with regional services near 3rd/Peralta

#### <u>Transbay Corridors (Oakland – San Francisco & Dumbarton)</u>

Relocate Jack London Square Amtrak station to provide intermodal with relocated West Oakland BART near 3rd/Peralta

Replace BART transbay fleet w/ high capacity cars; improve San Francisco station access; construct 4th track through Oakland; split East Bay service from San Francisco service and provide cross-platform transfers to and from San Francisco and East Bay lines at MacArthur & 12th Street; relocate West Oakland station to provide new intermodal with regional services at 3rd/Peralta; provide mezzanine level pedestrian connection between Transbay Transit Center and Embarcardero BART station

Dumbarton service operates with standard consist from Union City to Peninsula destinations from Union City and Stockton

### Central Valley (Sacramento - Fresno)

Implement freight by-pass along Central California Traction line from Stockton to Sacramento and along West Side line from Tracy to Fresno; construct new passenger connection along SR-132 alignment from Modesto to West Side line; provide passenger service through Tri-Valley to Modesto and Patterson; San Joaquin trains routed through Tri-Valley with shuttle conection retained along BNSF between Stockton and Martinez

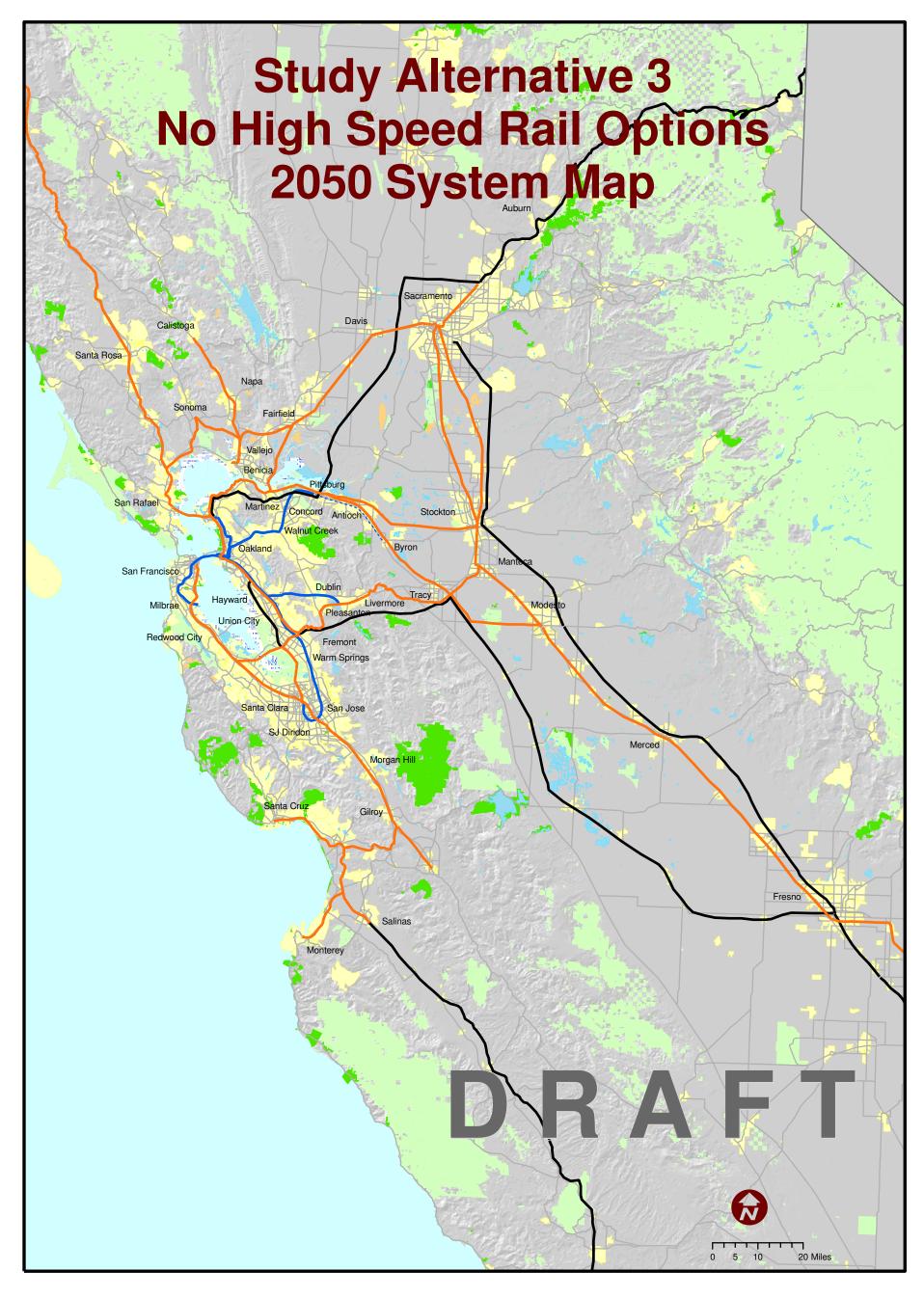
# <u>Tri-Valley Corridor (I-580, I-680 & I-205 from East Bay to Tracy/Manteca)</u>

Construct freight by-pass south of Livermore and Pleasanton extending through Patterson Pass to Tracy; construct new passenger tracks along former SPRR alignment through Niles Canyon and operate regional services on SPRR from Niles to Sunol and on UPRR from Sunol to Tracy

Extend BART via El Chorro Road to UPRR alignment with intermodal terminus at Isabel

# <u>I-680 Corridor (Fairfield – San Jose & Tracy)</u>

Provide regional passenger service between Martinez and Tracy via UPRR Tracy Subdivision (Mococo line); transfer to I-80 services at Martinez and transfer to Tri-Valley services at Tracy



Conservation Areas

- HSR only, light weight equipment, double track, fully grade separated
  Regional Passenger Rail, light weight, fully grade separated
  HSR with Regional Passenger Rail

- Freight/Regional Rail
  Predominantly freight, standard equipment

#### STUDY ALTERNATIVE 4 Year 2050 Rail Network

High Speed Rail Entry from South
Option 1 – Merced / GEA North / Pacheco Pass / UPRR Gilroy – San Jose
With
San Jose – San Francisco Peninsula HSR Line
San Francisco – Oakland Transbay Tunnel

Regional Passenger Rail System Overlay Service And Corridor-Specific Treatments

**Existing Freight Operating Practices** 

BART Mass Transit Evolution Add Track for Express & New Local Stops

#### US 101 North Corridor (San Francisco - Cloverdale)

Improve 101 corridor service to support long term growth using passenger equipment mixed with freight service north of Ignacio Wye (Novato)

#### I-80 Corridor (Oakland – Auburn)

Upgrade existing line to 3 or 4 tracks with grade separations and operational improvements for enhanced regional service operations with standard passenger equipment

# North Bay Corridor (US 101 to I-80 across San Pablo Bay between Petaluma and Cordelia)

Operate Calistoga to Vallejo and San Rafael to Fairfield / Vacaville service via NWP and California Northern lines; extend 100 corridor service across future replacement Richmond-San Rafael bridge to connect with Richmond BART

# Peninsula Corridor (San Francisco – San Jose)

High Speed Rail operates on 4 track corridor from San Jose to San Francisco; overlay regional service provided to express and local stops San Jose to San Francisco

BART adds 30th Street stop and provides express & local service between SFO/Millbrae and downtown San Francisco

# <u>South Counties Corridor (San Jose – Santa Cruz / Monterey / Salinas)</u>

High Speed Rail with statewide service enters from south via Merced - GEA North alignment to Gilroy and San Jose; regional overlay service provided on all HSR segments; conventional corridor service operates from San Jose to Salinas with shuttle between Gilroy & Hollister; provide Santa Cruz to Monterey service with transfers at Pajaro and Castroville

# East Bay Corridor (Oakland - San Jose

Shift passenger service to improved Oakland Subdivison between Oakland & Niles; Improve Centerville Line & Coast Subdivision Niles to San Jose; construct new passenger-only line via Caltrain – Trimble – I-880 alignment from Niles to San Jose; relocate JLS station to new West Oakland BART intermodal near 3rd/Peralta

BART extension to Warm Springs & Santa Clara; new East Bay BART stations with express & local service; BART/regional services intermodal at relocated West Oakland station near 3rd/Peralta

#### <u>Transbay Corridors (Oakland – San Francisco & Dumbarton)</u>

High Speed Rail extends from San Francisco to Oakland via new transbay rail tunnel from Transbay Transit Center to Oakland; extend Peninsula express and local service w/ lightweight electric equipment to I-80 corridor; relocate Jack London Square station to new BART/HSR intermodal at relocated West Oakland BART station near 3rd/Peralta

Construct 4th BART track through Oakland; operate BART express and local services through existing transbay tube; realign BART to relocated West Oakland stop near 3rd/Peralta

Dumbarton service operates with standard consist from Union City to Peninsula destinations from Union City and Stockton

#### Central Valley (Sacramento – Fresno)

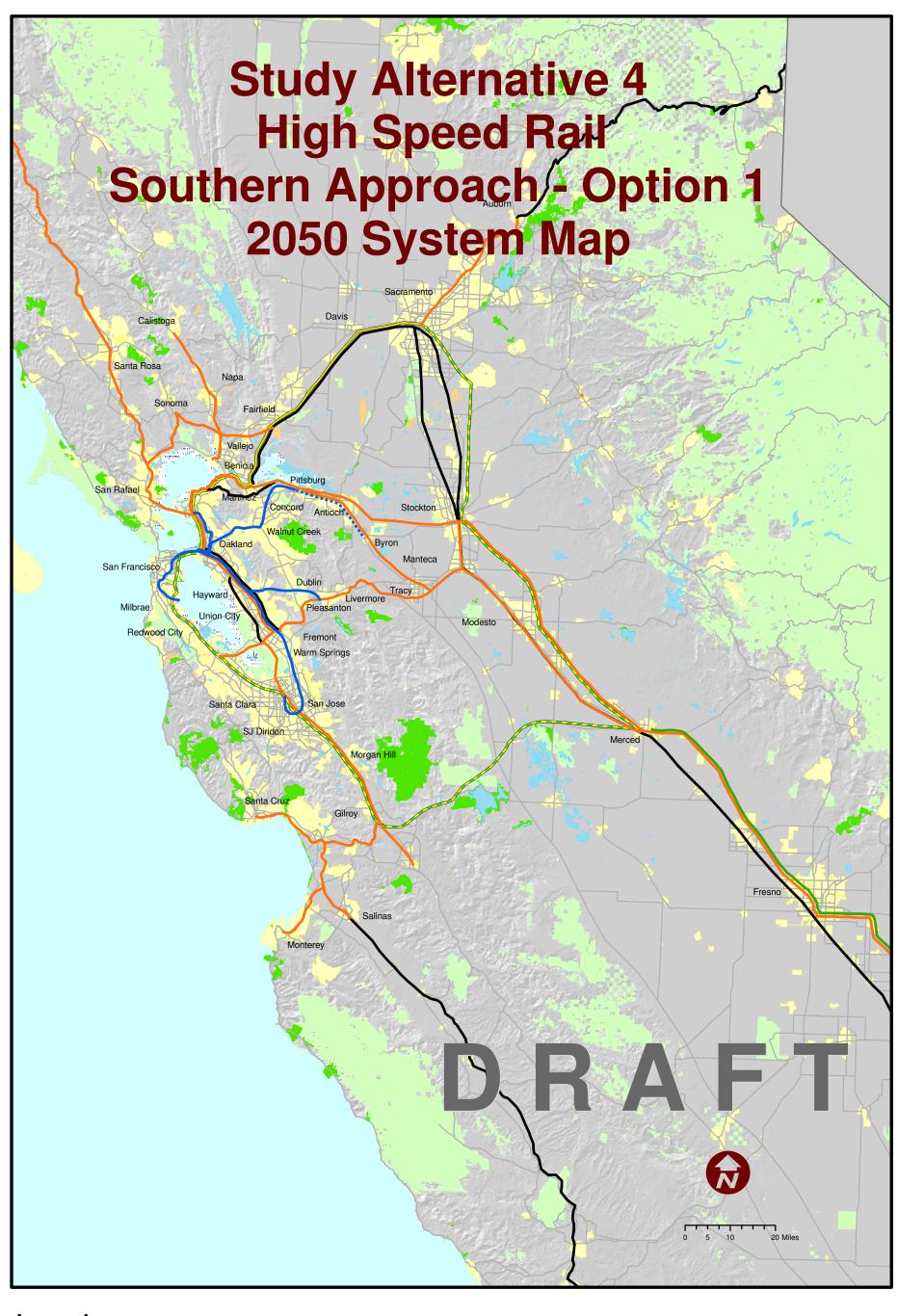
High Speed Rail operates along BNSF Fresno to Stockton and along Central California Traction Stockton to Sacramento; regional overlay service provided Merced to Sacramento and from Merced to Oakland via San Jose and San Francisco

# <u>Tri-Valley Corridor (I-580, I-680 & I-205 from East Bay to Tracy/Manteca)</u>

Upgrade UPRR route with capacity and operational improvements to provide higher speed service for ACE trains; put SPRR alignment through Niles Canyon back in service and operate directionally between Niles Junction and Sunol; relocate Vasco Road station to provide new intermodal with BART at Greenville Road / I-580

Extend BART via El Chorro road to UPRR alignment with intermodal terminus at Isabel; add West Dublin stop

# <u>I-680 Corridor (Fairfield – San Jose & Tracy)</u>



Conservation Areas

- HSR only, light weight equipment, double track, fully grade separated
  Regional Passenger Rail, light weight, fully grade separated
  HSR with Regional Passenger Rail

- Freight/Regional Rail Predominantly freight, standard equipment
- BART

#### STUDY ALTERNATIVE 5 Year 2050 Rail Network

High Speed Rail Entry from South
Option 2 – via Los Banos Henry Miller / Pacheco Pass / UPRR Gilroy – San Jose
With
San Jose – Oakland East Bay HSR Line

Regional Passenger Rail System Overlay Service And Corridor-Specific Treatments

Freight Dispatching Optimized
Best Use of Capacity

BART Regional System Expansion New Transbay Tube and San Francisco Line

#### US 101 North Corridor (San Francisco - Cloverdale)

Improve 101 corridor service to support long term growth using passenger equipment mixed with freight service north of Ignacio Wye (Novato)

#### I-80 Corridor (Oakland - Auburn)

Upgrade existing line to 3 or 4 tracks with grade separations and operational improvements for enhanced regional service operations with standard passenger equipment

Extend BART Richmond line to intercept station on I-80 north of Hercules

# North Bay Corridor (US 101 to I-80 across San Pablo Bay between Petaluma and Cordelia)

Operate Calistoga to Vallejo and San Rafael to Fairfield / Vacaville service via NWP and California Northern lines; provide high frequency express bus connection across Richmond-San Rafael Bridge to connect between San Rafael 101 corridor service and Richmond BART

# Peninsula Corridor (San Francisco - San Jose)

Improve to 2-4 track grade separated electric system supporting express and local service between San Jose and Transbay Transit Center using lightweight electrified equipment; accommodation for night freight service using standard freight equipment

New BART subway extension from new transbay tube via Transbay Transit Center and Union Square to Presidio Terminus

# <u>South Counties Corridor (San Jose – Santa Cruz / Monterey / Salinas)</u>

High Speed Rail with statewide service enters from south via Pacheco Pass alignment to Gilroy and San Jose; overlay service on high speed line serves regional trips from Gilroy to San Jose; parallel conventional commuter service operates from San Jose to Salinas with shuttle between Gilroy & Hollister; provide Santa Cruz to Monterey service with transfers at Pajaro and Castroville; regional train service to Monterey via East Bay

# East Bay Corridor (Oakland - San Jose)

High Speed Rail with statewide service operates from San Jose to Oakland with alignment along Niles subdivision north of Niles and via I-880 - Trimble - Coast subdivision Niles to San Jose; standard passenger rail provides regional service between Oakland and San Jose with some trains extended to Monterey; intermodal with HSR & existing BART transbay lines at relocated West Oakland stop near 3rd/Peralta; intermodal with standard passenger trains and new BART transbay line at Broadway

#### East Bay Corridor (Continued)

BART extension to Warm Springs & Santa Clara; new BART/regional services intermodal at Broadway along new transbay BART line with standard passenger; intermodal with HSR lines at relocated West Oakland station near 3rd/Peralta

# Transbay Corridors (Oakland - San Francisco & Dumbarton)

High Speed Rail intermodal with existing BART lines at relocated West Oakland station near 3rd/Peralta; intermodal with standard passenger services and new BART transbay line at Broadway

Construct 4th BART track through Oakland; split Bay Point service and extend to Jack London Square, Alameda and San Francisco via new tube and new San Francisco subway line; new BART transbay line has intermodal with relocated regional services station at Broadway near Jack London Square and intermodal with Transbay Transit Center in San Francisco; existing BART lines have intermodal with HSR at relocated West Oakland station near 3rd/Peralta

Dumbarton service operates with lightweight electric on separate trackage through Centerville between Peninsula and East Bay; operates over existing low-level bridge

# Central Valley (Sacramento - Fresno)

High Speed Rail operates along BNSF Fresno to Merced and along UPRR from Merced to Sacramento; regional overlay service provided Merced to Sacramento connecting with new regional line through Tri-Valley near Manteca; regional overlay service provided Merced to Oakland via San Jose

# <u>Tri-Valley Corridor (I-580, I-680 & I-205 from East Bay to Tracy/Manteca)</u>

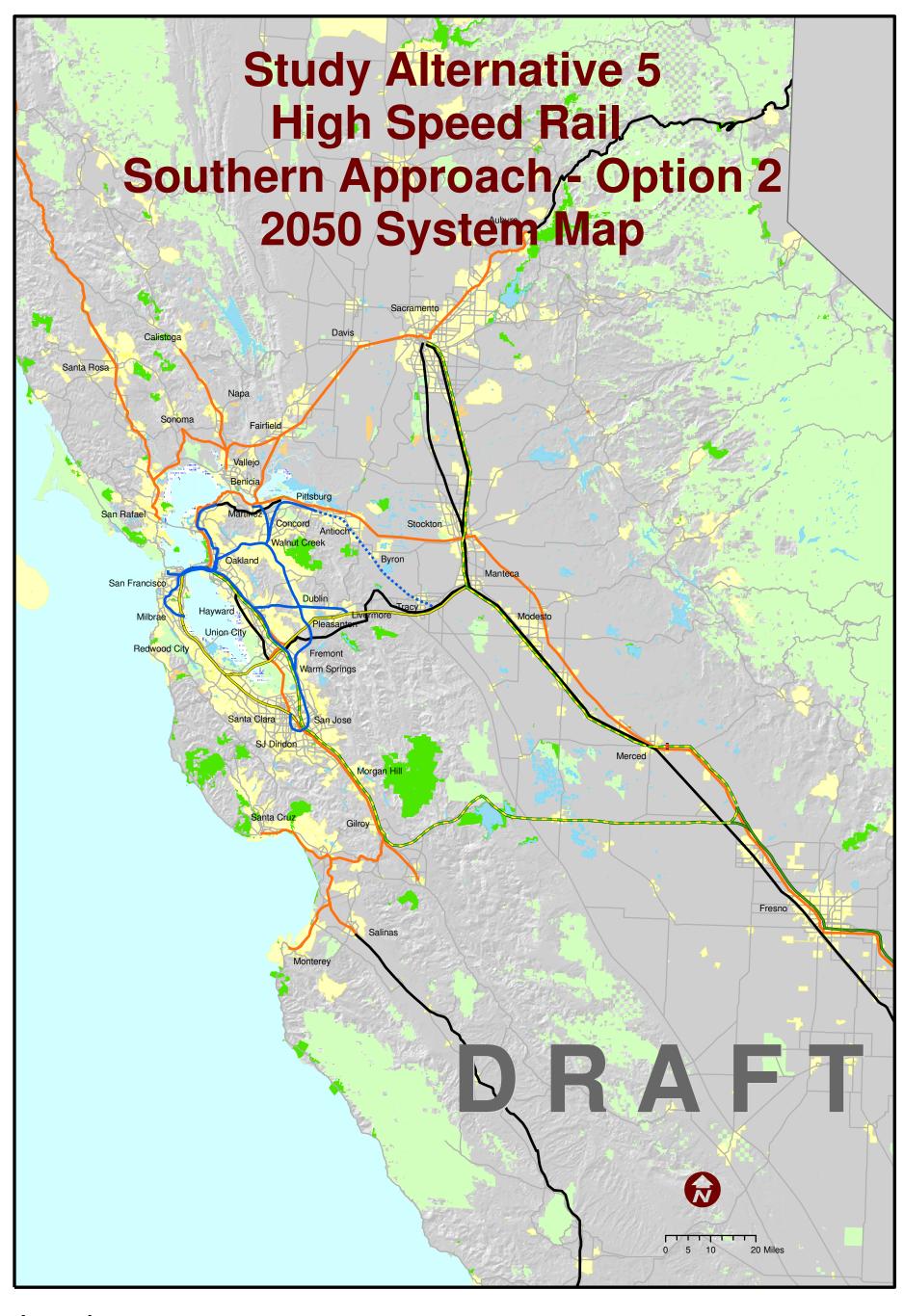
Put SPRR alignment through Niles Canyon back in service and operate freights directionally between Niles Junction and Sunol; construct freight by-pass south of Livermore and Pleasanton to allow existing UPRR alignment to be converted for passenger-only service; construct tunnel for lightweight passenger equipment between Niles Junction and Sunol; passenger services only operate through Pleasanton and Livermore to new Altamont Alignment connecting via the SPRR r/w through Tracy to valley lines in Manteca; provide intermodal with BART at Greenville Road

Extend BART system along I-580 to intermodal at Greenville Road with new stop at Isabel

# I-680 Corridor (Fairfield – San Jose & Tracy)

Provide new BART line along I-680 from Warm Springs BART station to intermodal with Capitol Corridor at Martinez; transfer stations at West Dublin and Walnut Creek to existing BART Dublin/Pleasanton and Bay Point lines

Extend eBART service to connect with regional service at Tracy



Conservation Areas

- HSR only, light weight equipment, double track, fully grade separated
   Regional Passenger Rail, light weight, fully grade separated
- HSR with Regional Passenger Rail
- Freight/Regional Rail
- Predominantly freight, standard equipment
- BART

#### STUDY ALTERNATIVE 6 Year 2050 Rail Network

High Speed Rail Entry from South
Option 3 – via Los Banos Henry Miller / Pacheco Pass / UPRR Gilroy – San Jose
With
San Jose – San Francisco Peninsula Line
San Jose – Oakland East Bay Line

Regional Passenger Rail System Overlay Service And Corridor-Specific Treatments

Freight By-Pass Lines with Consolidated Dispatching Shift Freight Traffic away from City Centers

BART Core Capacity Improvements
Infrastructure and Vehicles

#### US 101 North Corridor (San Francisco - Cloverdale)

Improve 101 corridor service to support long term growth using passenger equipment mixed with freight service north of Ignacio Wye (Novato)

#### I-80 Corridor (Oakland – Auburn)

Upgrade regional service to 3 or 4 tracks; shift freight service to BNSF north of Richmond and construct by-pass for freight along former Sacramento Northern (Pittsburg - Sacramento); develop new freight by-pass line around Sacramento; use BNSF between Richmond and Port Chicago for freight by-pass

# North Bay Corridor (US 101 to I-80 across San Pablo Bay between Petaluma and Cordelia)

Operate Calistoga to Vallejo and San Rafael to Fairfield / Vacaville service via NWP and California Northern lines; provide high frequency express bus connection across Richmond-San Rafael Bridge to connect between San Rafael 101 corridor service and Richmond BART

# Peninsula Corridor (San Francisco - San Jose)

High Speed Rail operates on 4 track corridor from San Jose to San Francisco; overlay regional service provided to express and local stops San Jose to San Francisco

BART San Francisco station access improvements; other operational improvements as needed to improve core capacity

# <u>South Counties Corridor (San Jose – Santa Cruz / Monterey / Salinas)</u>

High Speed Rail with statewide service enters from south via Pacheco Pass alignment to Gilroy and San Jose; regional service operates as overlay to HSR; branch from Gilroy to Salinas is provided to accommodate regional service from San Francisco to Salinas; wharf-to-wharf service provided between Santa Cruz and Monterey operated with standard equipment with transfers to higher speed system at Pajaro and Castroville; provision for shuttle between Gilroy and Hollister

# East Bay Corridor (Oakland - San Jose)

High Speed Rail with statewide service and regional overlay operates from San Jose to Oakland; intermodal with BART at 12th / Broadway; regional standard rail service provided along UPRR with capacity & operational improvements; add local stops in East Bay; add grade separations

BART extension to Warm Springs & Santa Clara; construct 4th track through Oakland and split East Bay service from San Francisco service with cross-platform transfers at MacArthur and 12th Street

#### <u>Transbay Corridors (Oakland – San Francisco & Dumbarton)</u>

(No new Bay Crossing OAK-San Francisco; HSR intermodal at 12th Street and BART Core Capacity improvements to address demand)

Replace BART transbay fleet w/ high capacity cars; improve San Francisco station access; construct 4th track through Oakland; split East Bay service from San Francisco service and provide cross-platform transfers to and from San Francisco and East Bay lines at MacArthur & 12th Street; 12th Street intermodal with HSR

Dumbarton service operates with standard consist between Peninsula and Union City with second line between Peninsula and Modesto (see Tri-Valley)

#### Central Valley (Sacramento - Fresno)

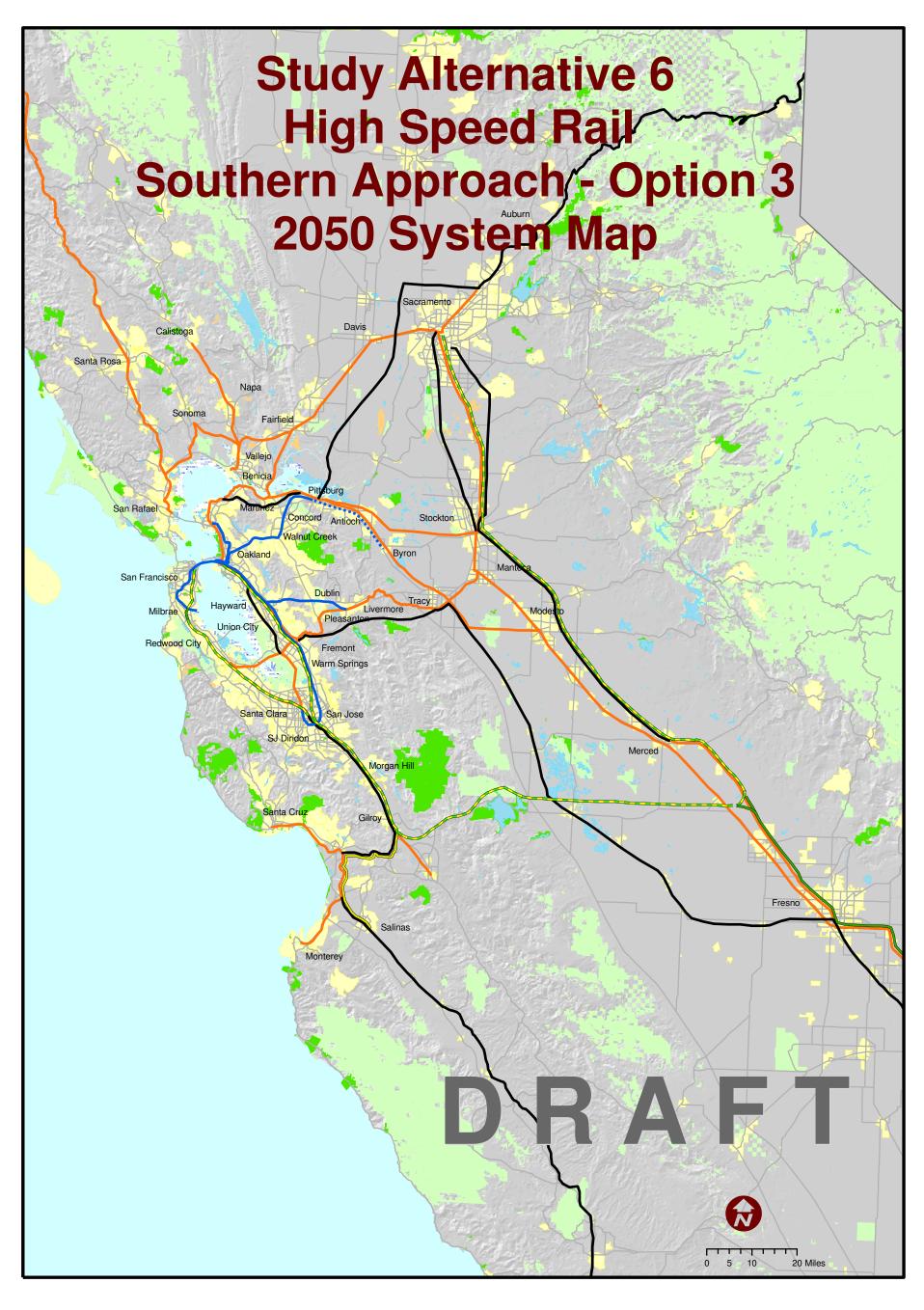
High Speed Rail operates along BNSF Stockton to Fresno and along UPRR Stockton to Sacramento; regional overlay service is provided from Sacramento to Oakland and San Francisco via Merced and San Jose; freight by-pass is developed along West Side line; new line is constructed from Modesto to West Side line via SR-132 alignment to support regional service from Tri-Valley; San Joaquin trains routed through Tri-Valley with shuttle connection retained along BNSF between Stockton and Martinez

# <u>Tri-Valley Corridor (I-580, I-680 & I-205 from East Bay to Tracy/Manteca)</u>

Construct freight by-pass south of Livermore and Pleasanton extending through Patterson Pass to Tracy; construct new passenger tracks along former SPRR alignment through Niles Canyon and operate ACE service on SPRR from Niles to Sunol and on UPRR from Sunol to Tracy

Extend BART via El Chorro Road to UPRR alignment with intermodal terminus at Isabel

# I-680 Corridor (Fairfield – San Jose & Tracy)



Conservation Areas

- HSR only, light weight equipment, double track, fully grade separated
- Regional Passenger Rail, light weight, fully grade separated
- HSR with Regional Passenger Rail
  - Freight/Regional Rail
- Predominantly freight, standard equipment
- BART

#### STUDY ALTERNATIVE 7 Year 2050 Rail Network

High Speed Rail Entry from East
Option 1 – via Tri-Valley UPRR Alignment
With
New Dumbarton High Level Bridge Bay Crossing
San Jose – San Francisco Peninsula Line

Regional Passenger Rail System Overlay Service And Corridor-Specific Treatments

Freight Dispatching Optimized Best Use of Capacity

BART Regional System Expansion New Transbay Tube and San Francisco Line

#### US 101 North Corridor (San Francisco - Cloverdale)

Improve 101 corridor service to support long term growth using passenger equipment mixed with freight service north of Ignacio Wye (Novato)

#### I-80 Corridor (Oakland – Auburn)

Upgrade existing line to 3 or 4 tracks with grade separations and operational improvements for enhanced regional service operations with standard passenger equipment

Extend BART Richmond line to intercept station on I-80 north of Hercules

# North Bay Corridor (US 101 to I-80 across San Pablo Bay between Petaluma and Cordelia)

Operate Calistoga to Vallejo and San Rafael to Fairfield / Vacaville service via NWP and California Northern lines

High-frequency express bus connection across Richmond-San Rafael Bridge to connect between San Rafael 101 corridor service and Richmond BART

# Peninsula Corridor (San Francisco – San Jose)

High Speed Rail operates on 4 track corridor from San Jose to San Francisco; overlay regional service provided to express and local stops San Jose to San Francisco

New BART subway extension from new transbay tube via Transbay Transit Center and Union Square to Presidio Terminus

# <u>South Counties Corridor (San Jose – Santa Cruz / Monterey / Salinas)</u>

Extend commuter service using standard equipment from San Jose to Salinas with shuttle between Gilroy & Hollister; provide Santa Cruz to Monterey service with transfers at Pajaro and Castroville; provision for San Francisco to Monterey regional train

# East Bay Corridor (Oakland - San Jose)

Shared regional service with programmed capacity & operational improvements and additional capacity & operational improvements to support higher service levels; add local stops in East Bay; add grade separations; intermodal with standard passenger trains and new BART transbay line at Broadway

BART extension to Warm Springs & Santa Clara; new BART/regional services intermodal at Broadway along new transbay BART line

#### <u>Transbay Corridors (Oakland – San Francisco & Dumbarton)</u>

High Speed Rail terminates at 12th Street intermodal with BART in Oakland; relocate Jack London Square regional services station to Broadway intermodal with new BART transbay line; provide mezzanine-level pedestrian connection between Embarcardero BART and Transbay Transit Center

Construct 4th BART track through Oakland; split Bay Point service and extend to Jack London Square, Alameda and San Francisco via new tube and new San Francisco subway line; new BART transbay line has intermodal with regional services at Broadway in Oakland and with Transbay Transit Center/HSR in San Francisco

Dumbarton service operates with lightweight electric on separate trackage through Centerville between Peninsula and East Bay; new high-level bridge constructed across bay

#### Central Valley (Sacramento - Fresno)

High Speed Rail operates along BNSF Fresno to Merced and along UPRR from Merced to Sacramento; regional overlay service provided Merced to Sacramento connecting with new regional line through Tri-Valley near Manteca

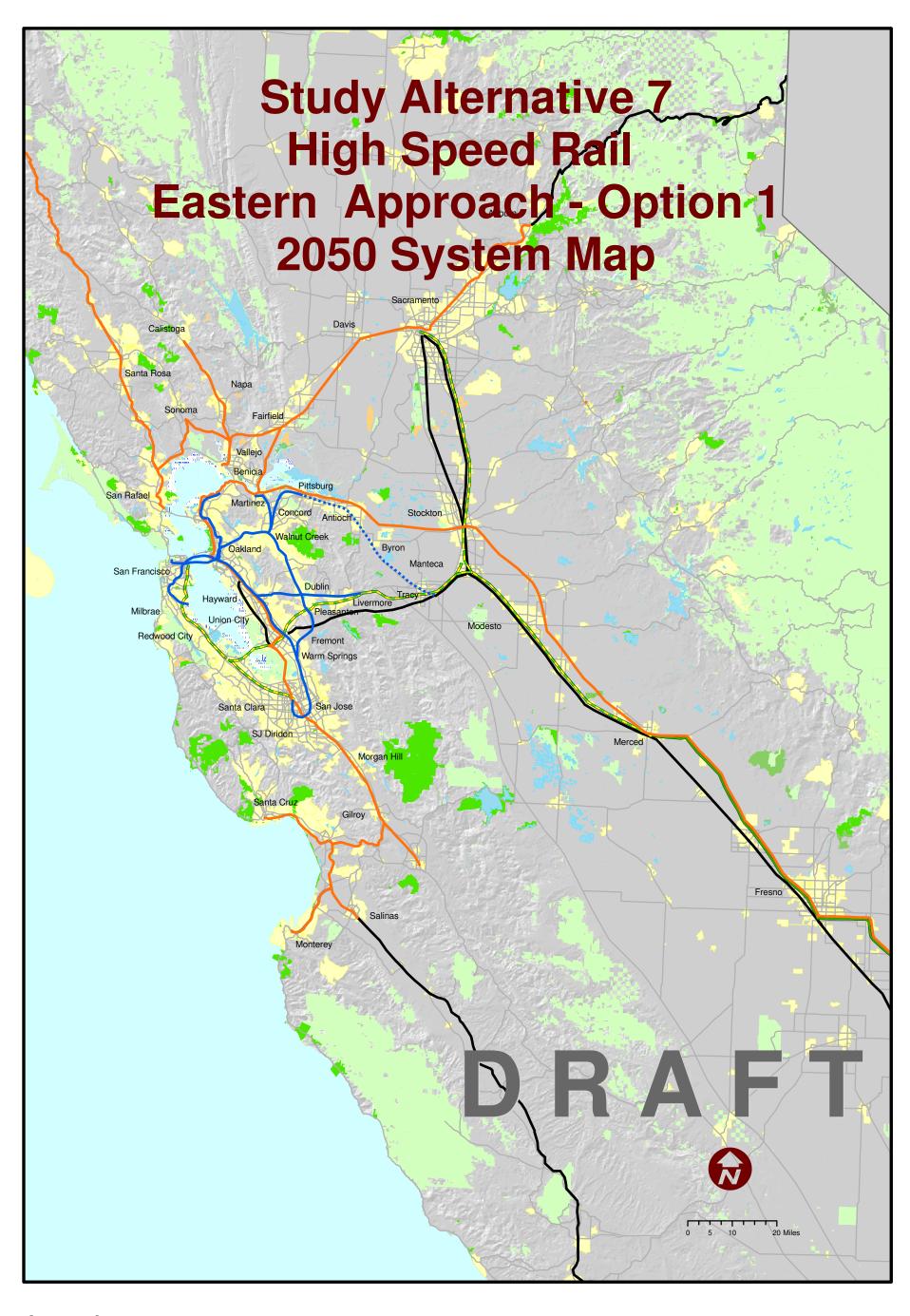
# <u>Tri-Valley Corridor (I-580, I-680 & I-205 from East Bay to Tracy/Manteca)</u>

High Speed Rail enters via new alignment over Altamont Pass; a freight bypass is constructed south of Livermore and Pleasanton between Sunol/I-680 and Greenville Road/I-580 and the existing UPRR alignment is converted to High Speed Rail; High Speed Rail extends to Niles Junction via a new tunnel under Niles Canyon; a regional overlay service is operated along the high speed alignment connecting Central Valley points with San Jose via Dumbarton Bridge and the Peninsula; intermodal with BART provided at Greenville Road/I-580

Extend BART system along I-580 to intermodal at Greenville Road with new stop at Isabel

# <u>I-680 Corridor (Fairfield – San Jose & Tracy)</u>

Provide new BART line along I 680 from Warm Springs BART station to intermodal with Capitol Corridor at Martinez; transfer stations at West Dublin and Walnut Creek to existing BART Dublin/Pleasanton and Bay Point line; extend eBART service to connect with regional service at Tracy



Conservation Areas

- HSR only, light weight equipment, double track, fully grade separated
  Regional Passenger Rail, light weight, fully grade separated
- HSR with Regional Passenger Rail
- Freight/Regional Rail
- Predominantly freight, standard equipment
- **BART**

#### STUDY ALTERNATIVE 8 Year 2050 Rail Network

High Speed Rail Entry from East
Option 2 – via Tri-Valley along I-580 Alignment
With
San Jose – Oakland East Bay Line
San Francisco – Oakland Transbay Tunnel

Regional Passenger Rail System Overlay Service And Corridor-Specific Treatments

**Existing Freight Operating Practices** 

BART Core Capacity Improvements
With New Transbay Tube and San Francisco Subway Line

#### US 101 North Corridor (San Francisco - Cloverdale)

Improve 101 corridor service to support long term growth using passenger equipment mixed with freight service north of Ignacio Wye (Novato)

#### I-80 Corridor (Oakland – Auburn)

Construct new higher speed passenger line for lightweight equipment from Oakland to vicinity of Martinez via UPRR; construct new bridge across Carquinez Strait (study corridor includes Crockett-Martinez-Pittsburg); develop separate passenger line along UPRR alignment to Sacramento

# North Bay Corridor (US 101 to I-80 across San Pablo Bay between Petaluma and Cordelia)

Operate Calistoga to Vallejo and San Rafael to Fairfield / Vacaville service via NWP and California Northern lines; extend 100 corridor service across future replacement Richmond-San Rafael bridge to connect with Richmond BART

# Peninsula Corridor (San Francisco – San Jose)

Improve capacity to 2-4 tracks grade separated to support express and local services with electrified standard equipment; freight operates at night

New BART subway extension from new transbay tube via Transbay Transit Center/HSR stop and Union Square to Presidio Terminus

# <u>South Counties Corridor (San Jose – Santa Cruz / Monterey / Salinas)</u>

Extend commuter service using standard equipment from San Jose to Salinas with shuttle between Gilroy & Hollister; provide Santa Cruz to Monterey service with transfers at Pajaro and Castroville; provision for San Francisco to Monterey regional train

# East Bay Corridor (Oakland - San Jose)

High Speed Rail with statewide service branches from Hayward to both San Jose and Oakland; high speed overlay provides regional service between Oakland and San Jose; intermodal with all BART lines at relocated West Oakland station near 3rd/Peralta

BART extension to Warm Springs & Santa Clara; BART intermodal with HSR & regional lines at relocated West Oakland station near 3rd/Peralta

#### <u>Transbay Corridors (Oakland – San Francisco & Dumbarton)</u>

High Speed Rail extends from Oakland to San Francisco via new transbay rail tunnel from Transbay Transit Center to Oakland; regional overlay service is provided from San Francisco to San Jose and Sacramento using lightweight equipment; relocate Jack London Square station to new BART/HSR/regional intermodal at relocated West Oakland BART station near 3rd/Peralta

Construct 4th BART track through Oakland; provide new transbay line splitting just west of Oakland Wye to new San Francisco subway line; new BART transbay line will carry Pittsburg line; all BART lines have intermodal with HSR and regional rail at relocated West Oakland station near 3rd/Peralta and new BART transbay line has intermodal with Transbay Transit Center in San Francisco

Dumbarton service operates with standard consist between Peninsula and Union City

# Central Valley (Sacramento - Fresno)

High Speed Rail operates along BNSF Merced to Fresno and along UPRR from Merced to Sacramento; regional overlay service provided Merced to Sacramento connecting with new regional line through Tri-Valley near Manteca

# <u>Tri-Valley Corridor (I-580, I-680 & I-205 from East Bay to Tracy/Manteca)</u>

High Speed Rail enters via new alignment over Altamont Pass parallel to I-580 and continues in the median of I-580 to vicinity of Bay Fair BART; a regional overlay service is provided between Central Valley points and San Jose

HSR displaces BART Dublin/Pleasanton branch; service to Tri-Valley provided by regional overlay operating on HSR tracks; intermodal connections provided at Coliseum/Oakland Airport and Union City

# I-680 Corridor (Fairfield - San Jose & Tracy)



Conservation Areas

- HSR only, light weight equipment, double track, fully grade separated Regional Passenger Rail, light weight, fully grade separated
- HSR with Regional Passenger Rail
- Freight/Regional Rail
- Predominantly freight, standard equipment
- BART

#### STUDY ALTERNATIVE 9 Year 2050 Rail Network

High Speed Rail Entry from East
Option 3 – via Tri-Valley along South of Livermore Alignment
With
San Jose – Oakland East Bay Line
San Jose – San Francisco Peninsula Line

Regional Passenger Rail System Overlay Service And Corridor-Specific Treatments

Freight Dispatching Optimized Best Use of Capacity

BART Core Capacity Improvements
Infrastructure and Vehicles

#### US 101 North Corridor (San Francisco - Cloverdale)

Improve 101 corridor service to support long term growth using passenger equipment mixed with freight service north of Ignacio Wye (Novato)

#### <u>I-80 Corridor (Oakland – Auburn)</u>

Upgrade existing line to 3 or 4 tracks with grade separations and operational improvements for enhanced regional service operations with standard passenger equipment

# North Bay Corridor (US 101 to I-80 across San Pablo Bay between Petaluma and Cordelia)

Operate Calistoga to Vallejo and San Rafael to Fairfield / Vacaville service via NWP and California Northern lines; extend 100 corridor service across future replacement Richmond-San Rafael bridge to connect with Richmond BART

# Peninsula Corridor (San Francisco – San Jose)

High Speed Rail operates on 4 track corridor from San Jose to San Francisco; overlay regional service provided to express and local stops San Jose to San Francisco

BART San Francisco station access improvements; other operational improvements as needed to improve core capacity

# <u>South Counties Corridor (San Jose – Santa Cruz / Monterey / Salinas)</u>

Extend commuter service using standard equipment from San Jose to Salinas with shuttle between Gilroy & Hollister; provide Santa Cruz to Monterey service with transfers at Pajaro and Castroville; provision for San Francisco to Monterey regional train

# East Bay Corridor (Oakland - San Jose)

High Speed Rail with statewide service branches from Niles Junction to both San Jose and Oakland; San Francisco trains operate "around the Bay" through San Jose; regional overlay services provided Oakland-San Jose; intermodal terminal with BART at 12th Street/Broadway in Oakland; standard passenger trains continue to provide regional service Oakland to San Jose with necessary track improvements; Jack London Square station is relocated to new West Oakland BART intermodal near 3rd/Peralta

BART extension to Warm Springs & Santa Clara; construct 4th track through Oakland and split East Bay service from San Francisco service with cross-platform transfers at MacArthur and 12th Street

#### <u>Transbay Corridors (Oakland – San Francisco & Dumbarton)</u>

(No new Bay Crossing OAK-San Francisco; intermodal at 12th Street and Core Capacity improvements to address demand)

Replace BART transbay fleet w/ high capacity cars; improve San Francisco station access; construct 4th track through Oakland; split East Bay service from San Francisco service and provide cross-platform transfers to and from San Francisco and East Bay lines at MacArthur & 12th Street; relocate West Oakland station to provide intermodal with standard regional trains at 3rd/Peralta

Dumbarton service operates with standard consist between Peninsula and Union City

#### Central Valley (Sacramento - Fresno)

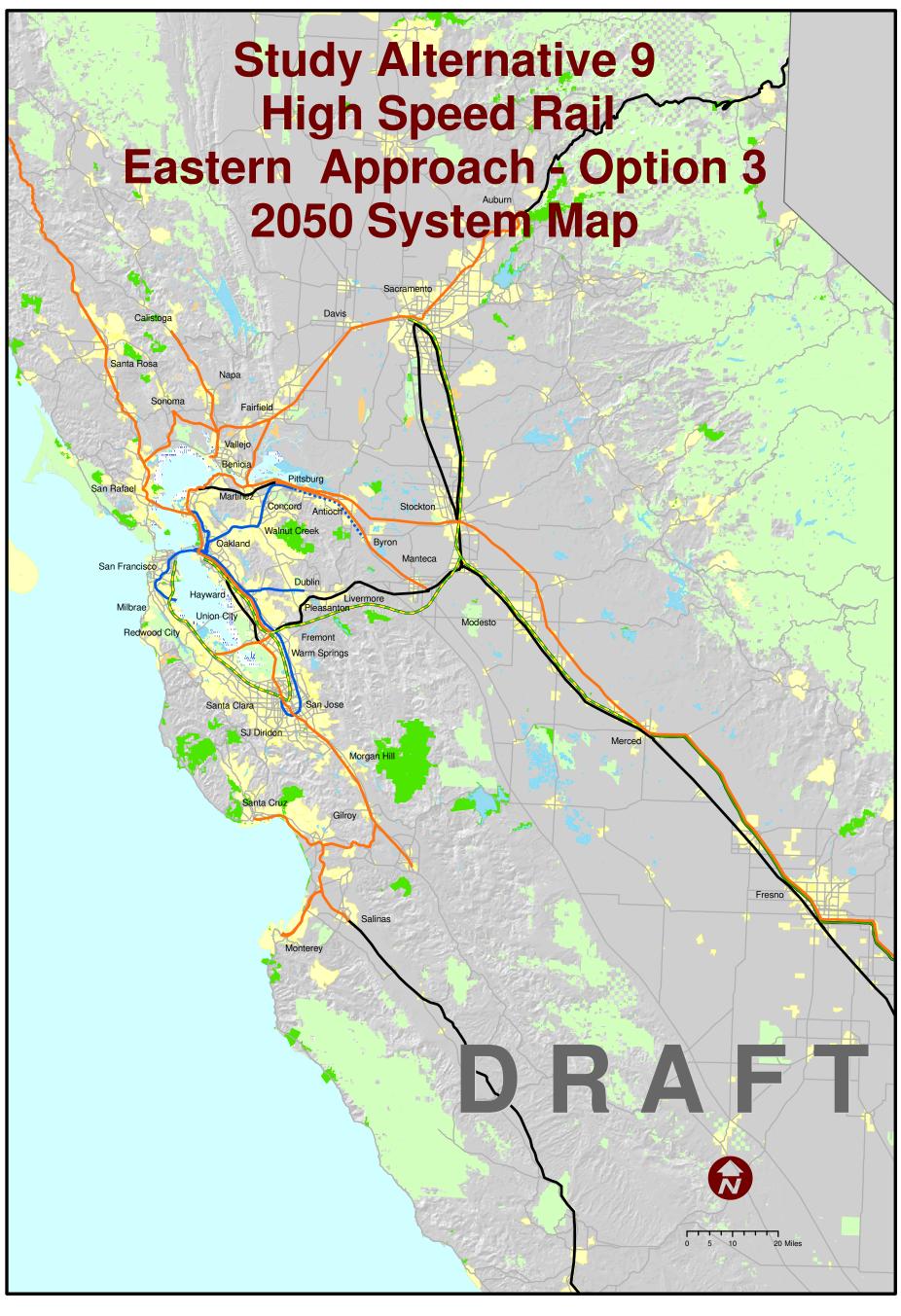
High Speed Rail operates along BNSF Fresno to Merced and along UPRR from Merced to Sacramento; regional overlay service provided Merced to Sacramento connecting with new regional line through Tri-Valley near Manteca

# <u>Tri-Valley Corridor (I-580, I-680 & I-205 from East Bay to Tracy/Manteca)</u>

High Speed Rail enters via new alignment through Patterson Pass south of Livermore and continues south of Pleasanton and through a new Niles Canyon tunnel to Niles Junction; a regional overlay service is provided between Central Valley and San Jose

BART is not extended; a bus shuttle is provided between the Isabel Road HSR stop and the existing East Dublin terminus

# I-680 Corridor (Fairfield – San Jose & Tracy)



Conservation Areas

- HSR only, light weight equipment, double track, fully grade separated
- Regional Passenger Rail, light weight, fully grade separated
- HSR with Regional Passenger Rail
- Freight/Regional Rail
- Predominantly freight, standard equipment
- BART

#### STUDY ALTERNATIVE 10 Year 2050 Rail Network

High Speed Rail Entry from East
Option 4 – via SR-84 and South of Livermore Alignment
With
San Jose – Oakland East Bay Line
San Francisco – Oakland Transbay Tunnel

Regional Passenger Rail System Overlay Service And Corridor-Specific Treatments

Freight Dispatching Optimized Best Use of Capacity

BART Core Capacity Improvements
With New Transbay Tube and San Francisco Subway Line

#### US 101 North Corridor (San Francisco - Cloverdale)

Improve 101 corridor service to support long term growth using passenger equipment mixed with freight service north of Ignacio Wye (Novato)

#### I-80 Corridor (Oakland – Auburn)

Construct new higher speed passenger line for lightweight equipment from Oakland to Sacramento; construct new bridge across Carquinez Strait (study corridor includes Crockett-Martinez-Pittsburg); develop separate passenger line along UPRR alignment to Sacramento

# North Bay Corridor (US 101 to I-80 across San Pablo Bay between Petaluma and Cordelia)

Operate Calistoga to Vallejo and San Rafael to Fairfield / Vacaville service via NWP and California Northern lines; extend I-80 corridor service across future replacement Richmond-San Rafael bridge to connect with Richmond BART

# Peninsula Corridor (San Francisco – San Jose)

Improve capacity to 2-4 tracks grade separated to support express and local services with electrified standard equipment; freight operates at night

BART San Francisco station access improvements; other operational improvements as needed to improve core capacity

# <u>South Counties Corridor (San Jose – Santa Cruz / Monterey / Salinas)</u>

Extend commuter service using standard equipment from San Jose to Salinas with shuttle between Gilroy & Hollister; provide Santa Cruz to Monterey service with transfers at Pajaro and Castroville; provision for San Francisco to Monterey regional train

# East Bay Corridor (Oakland - San Jose)

High Speed Rail with statewide service branches from Niles Junction to both San Jose and Oakland; regional overlay service is provided from Oakland to San Jose to supplant standard rail

BART extension to Warm Springs & Santa Clara; intermodal with HSR and regional lines at relocated West Oakland station near 3rd/Peralta

#### <u>Transbay Corridors (Oakland – San Francisco & Dumbarton)</u>

High Speed Rail extends from Oakland to San Francisco via new transbay rail tunnel from Transbay Transit Center to Oakland; extend Peninsula express and local service w/ lightweight electric equipment to I-80 corridor; relocate Jack London Square station to new BART & HSR intermodal at relocated West Oakland/7th Street BART station

Construct 4th BART track through Oakland; provide new transbay line splitting just west of Oakland Wye to new San Francisco subway; new BART transbay line will carry Pittsburg line; all BART lines have intermodal with HSR and regional rail at relocated West Oakland station near 3rd/Peralta and new BART transbay line has intermodal with Transbay Transit Center in San Francisco

Dumbarton service operates with standard consist between Peninsula and Union City

# Central Valley (Sacramento - Fresno)

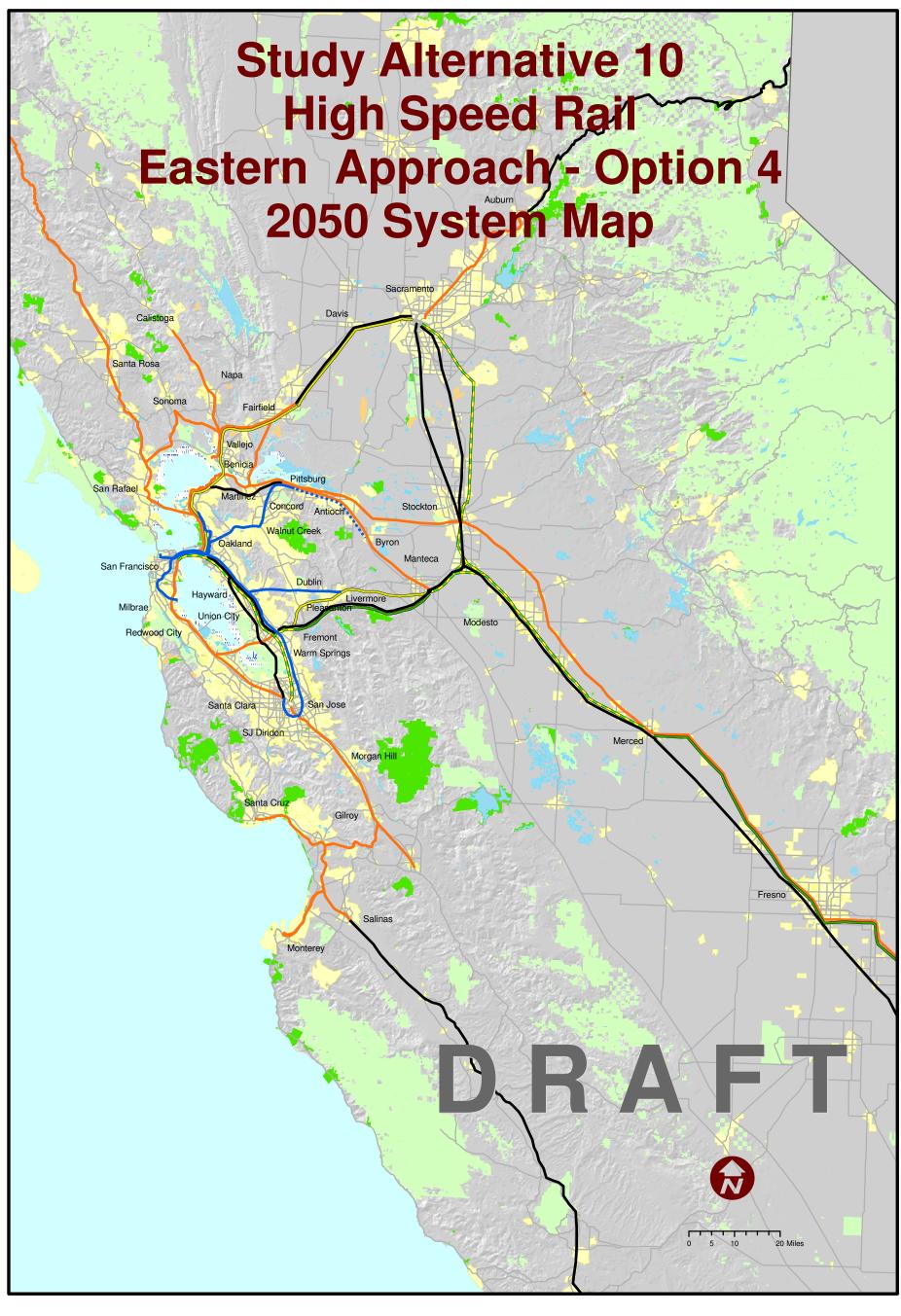
High Speed Rail operates along BNSF Merced to Fresno, along UPRR from Merced to Stockton, and along Central California Traction from Stockton to Sacramento; regional overlay service provided Merced to Sacramento connecting with new regional line through Tri-Valley near Manteca

# <u>Tri-Valley Corridor (I-580, I-680 & I-205 from East Bay to Tracy/Manteca)</u>

High Speed Rail enters via a new alignment through Patterson Pass south of Livermore and continues south of Pleasanton to a new tunnel through Niles Canyon; a freight track is included from the Central Valley to Sunol where it would connect back to the UPRR through Niles Canyon to allow freight traffic to bypass downtown Livermore and Pleasanton; the existing rail alignment through Livermore and Pleasanton is upgraded to support regional overlay service between the Central Valley and San Jose with local stops in the Tri-Valley

Extend BART system along I-580 to intermodal at Greenville Road with new stop at Isabel

# <u>I-680 Corridor (Fairfield – San Jose & Tracy)</u>



Conservation Areas

- HSR only, light weight equipment,
  double track, fully grade separated
  Regional Passenger Rail, light weight,
- fully grade separated
- HSR with Regional Passenger Rail
- Freight/Regional Rail
- Predominantly freight, standard equipment
- **BART**

#### STUDY ALTERNATIVE 11 Year 2050 Rail Network

High Speed Rail Entry from East
Option 5 – via Tri-Valley UPRR Alignment
With
New Dumbarton Rail Tunnel Bay Crossing
Redwood City – San Francisco Peninsula Line
San Jose – Oakland East Bay Line

Regional Passenger Rail System Overlay Service And Corridor-Specific Treatments

Freight By-Pass Lines with Consolidated Dispatching Shift Freight Traffic away from City Centers

BART Core Capacity Improvements
Infrastructure and Vehicles

#### US 101 North Corridor (San Francisco - Cloverdale)

Improve 101 corridor service to support long term growth using passenger equipment mixed with freight service north of Ignacio Wye (Novato)

#### I-80 Corridor (Oakland – Auburn)

Upgrade existing line to 3 or 4 tracks with grade separations and operational improvements for enhanced regional service operations with standard passenger equipment

# North Bay Corridor (US 101 to I-80 across San Pablo Bay between Petaluma and Cordelia)

Operate Calistoga to Vallejo and San Rafael to Fairfield / Vacaville service via NWP and California Northern lines; extend 100 corridor service across future replacement Richmond-San Rafael bridge to connect with Richmond BART

# Peninsula Corridor (San Francisco – San Jose)

High Speed Rail operates along the Peninsula north from Redwood City to San Francisco; corridor is upgraded to 2-4 tracks from Redwood City to San Jose to support express and local services from San Francisco to San Jose using lightweight equipment

BART San Francisco station access improvements; other operational improvements as needed to improve core capacity

# <u>South Counties Corridor (San Jose – Santa Cruz / Monterey / Salinas)</u>

Extend commuter service using standard equipment from San Jose to Salinas with shuttle between Gilroy & Hollister; provide Santa Cruz to Monterey service with transfers at Pajaro and Castroville; provision for San Francisco to Monterey regional train

# East Bay Corridor (Oakland - San Jose)

High Speed Rail with statewide service branches from Niles to separate lines serving Oakland, San Jose and San Francisco; high speed overlay provides regional service between Oakland and San Jose with alignment along Niles subdivision north of Niles and via I-880 - Trimble - Coast subdivision Niles to San Jose; intermodal with BART lines at 12th Street in Oakland; long distance regional trains using standard equipment operate from Auburn to Monterey via the East Bay with BART intermodal at relocated West Oakland station near 3rd/Peralta

BART extension to Warm Springs & Santa Clara; BART intermodal with HSR at 12th Street in Oakland and with standard regional trains at relocated West Oakland station near 3rd/Peralta

#### <u>Transbay Corridors (Oakland – San Francisco & Dumbarton)</u>

(No new Bay Crossing OAK-San Francisco; intermodal at 12th Street and West Oakland in East Bay and Core Capacity BART improvements to address demand)

Replace BART transbay fleet w/ high capacity cars; improve San Francisco station access; construct 4th track through Oakland; split East Bay service from San Francisco service and provide cross-platform transfers to and from San Francisco and East Bay lines at MacArthur & 12th Street; relocate West Oakland station to new regional intermodal near 3rd/Peralta

Dumbarton service operates with lightweight electric on separate trackage through Centerville between Peninsula and East Bay; new tunnel constructed across bay

#### Central Valley (Sacramento - Fresno)

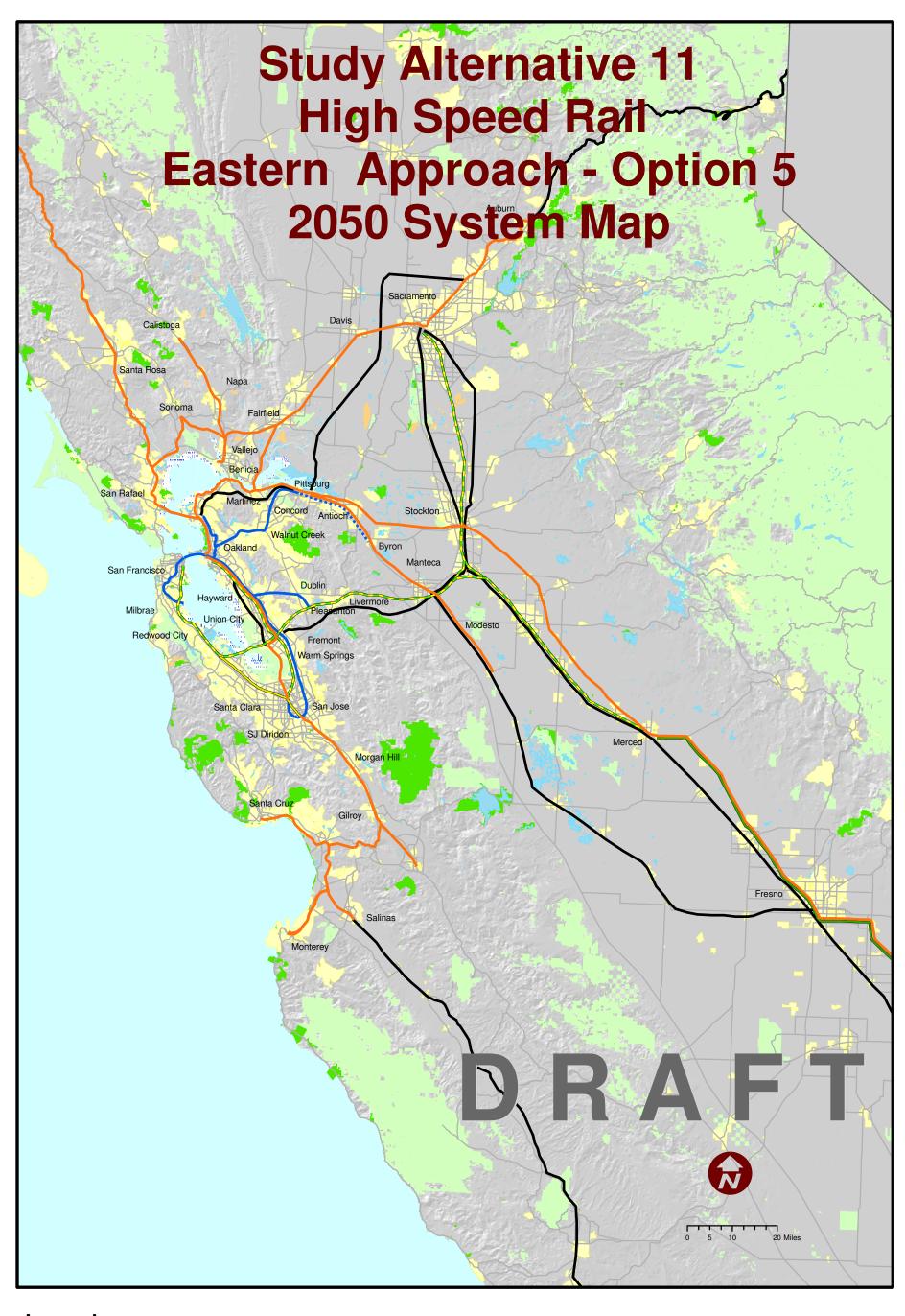
High Speed Rail operates along BNSF Fresno to Merced and along UPRR from Merced to Sacramento; regional overlay service provided Merced to Sacramento connecting with new regional line through Tri-Valley near Manteca; Central California Traction line from Sacramento to Stockton and West Side Line from Tracy to Fresno put into service as freight bypasses; new regional passenger service using standard equipment operates Martinez to Patterson

# <u>Tri-Valley Corridor (I-580, I-680 & I-205 from East Bay to Tracy/Manteca)</u>

Construct freight by-pass south of Livermore and Pleasanton between Sunol/I-680 and Greenville Road/I-580; construct new High Speed Rail tracks along a new alignment over Altamont Pass and along the UPRR through Livermore and Pleasanton, connecting via new tunnel to Niles Junction; regional overlay service opearates thorugh Tri-Valley connecting Central Valley with San Jose; intermodal with BART at Greenville Road/I-580

Extend BART system along I-580 to intermodal at Greenville Road with new stop at Isabel

# I-680 Corridor (Fairfield – San Jose & Tracy)



Federal Lands

Conservation Areas

Park Areas

- HSR only, light weight equipment, double track, fully grade separated
- Regional Passenger Rail, light weight, fully grade separated
- HSR with Regional Passenger Rail
- Freight/Regional Rail
- Predominantly freight, standard equipment
- BART

#### STUDY ALTERNATIVE 12 Year 2050 Rail Network

High Speed Rail Entry from East
Option 6 – via Tri-Valley UPRR Alignment
With
New Dumbarton Mid-Level Bridge Bay Crossing
Redwood City – San Francisco Peninsula Line
San Jose – Oakland East Bay Line

Regional Passenger Rail System Overlay Service And Corridor-Specific Treatments

Freight Dispatching Optimized Best Use of Capacity

BART Regional System Expansion New Transbay Tube and San Francisco Line

#### US 101 North Corridor (San Francisco - Cloverdale)

Improve 101 corridor service to support long term growth using passenger equipment mixed with freight service north of Ignacio Wye (Novato)

#### I-80 Corridor (Oakland – Auburn)

Upgrade existing line to 3 or 4 tracks with grade separations and operational improvements for enhanced regional service operations with standard passenger equipment

Extend BART Richmond line to intercept station on I-80 north of Hercules

# North Bay Corridor (US 101 to I-80 across San Pablo Bay between Petaluma and Cordelia)

Operate Calistoga to Vallejo and San Rafael to Fairfield / Vacaville service via NWP and California Northern lines; provide high frequency express bus connection across Richmond-San Rafael Bridge to connect between San Rafael 101 corridor service and Richmond BART

# Peninsula Corridor (San Francisco - San Jose)

High Speed Rail operates along the Peninsula north from Redwood City to San Francisco; corridor is upgraded to 2-4 tracks from Redwood City to San Jose to support express and local services from San Francisco to San Jose using lightweight equipment

New BART subway extension from new transbay tube via Transbay Transit Center and Union Square to Presidio Terminus

# <u>South Counties Corridor (San Jose – Santa Cruz / Monterey / Salinas)</u>

Extend commuter service using standard equipment from San Jose to Salinas with shuttle between Gilroy & Hollister; provide Santa Cruz to Monterey service with transfers at Pajaro and Castroville; provision for Oakland to Monterey regional train

# East Bay Corridor (Oakland – San Jose)

High Speed Rail branches at Niles Junction to San Jose and Peninsula; regional overlay provided west to Peninsula and south to San Jose; standard rail operates Oakland to San Jose with capacity & operational improvements

BART extension to Warm Springs & Santa Clara; intermodal with standard regional lines at relocated Jack London Square station at Broadway

#### <u>Transbay Corridors (Oakland – San Francisco & Dumbarton)</u>

High Speed Rail operates in new 4 track rail tunnel shared with BART between Oakland and San Francisco; intermodal with existing BART lines at 12th Street in Oakland and intermodal with standard regional services and new BART transbay line at Broadway in Oakland

Construct 4th BART track through Oakland; split Bay Point service and extend to Jack London Square, Alameda and San Francisco via new tube and new San Francisco subway line; new BART transbay line has intermodal with standard regional services at Broadway in Oakland and with Transbay Transit Center in San Francisco; existing BART lines have intermodal with HSR at 12th Street in Oakland

Dumbarton service operates with lightweight electric on separate trackage through Centerville between Peninsula and East Bay; new mid-level bridge constructed across bay

# Central Valley (Sacramento - Fresno)

High Speed Rail operates along BNSF Merced to Fresno and along UPRR from Merced to Sacramento; regional overlay service provided Merced to Sacramento connecting with new regional line through Tri-Valley near Manteca

# <u>Tri-Valley Corridor (I-580, I-680 & I-205 from East Bay to Tracy/Manteca)</u>

High Speed Rail with regional overlay service operates in new tunnel through Niles Canyon and in shared corridor with the UPRR through Pleasanton and Livermore and connects via new alignment over the Altamont Pass to Central Valley lines; Greenville Road intermodal with BART

Extend BART system along I-580 to intermodal at Greenville Road with new stop at Isabel

# <u>I-680 Corridor (Fairfield – San Jose & Tracy)</u>

Extend eBART service to connect with regional service at Tracy

#### **STUDY ALTERNATIVE 12**

Year **2050** Rail Network High Speed Rail Entry from East Option 6 – via Tri-Valley UPRR Alignment With

New Dumbarton Mid-Level Bridge Bay Crossing Redwood City – San Francisco Peninsula Line San Jose – Oakland East Bay Line

Regional Passenger Rail System Overlay Service And Corridor-Specific Treatments

Freight Dispatching Optimized Best Use of Capacity

BART Regional System Expansion New Transbay Tube and San Francisco Line

#### US 101 North Corridor (San Francisco - Cloverdale)

Improve 101 corridor service to support long term growth

#### I-80 Corridor (Oakland – Auburn)

Upgrade existing line to 3 or 4 tracks with grade separations and operational improvements for enhanced regional service operations with standard passenger equipment

Extend BART Richmond line to intercept station on I-80 north of Hercules

# North Bay Corridor (US 101 to I-80 across San Pablo Bay between Petaluma and Cordelia)

Operate Calistoga to Vallejo and San Rafael to Fairfield / Vacaville service via NWP and California Northern lines; provide high frequency express bus connection across Richmond-San Rafael Bridge to connect between San Rafael 101 corridor service and Richmond BART

# Peninsula Corridor (San Francisco - San Jose)

High Speed Rail operates along the Peninsula north from Redwood City to San Francisco; corridor is upgraded to 2-4 tracks from Redwood City to San Jose to support express and local services from San Francisco to San Jose using lightweight equipment

New BART subway extension from new transbay tube via Transbay Transit Center and Union Square to Presidio Terminus

# <u>South Counties Corridor (San Jose – Santa Cruz / Monterey / Salinas)</u>

Extend commuter service using standard equipment from San Jose to Salinas with shuttle between Gilroy & Hollister; provide Santa Cruz to Monterey service with transfers at Pajaro and Castroville; provision for Oakland to Monterey regional train

# East Bay Corridor (Oakland - San Jose)

High Speed Rail branches at Niles Junction to San Jose and Peninsula; regional overlay provided west to Peninsula and south to San Jose; standard rail operates Oakland to San Jose with capacity & operational improvements

BART extension to Warm Springs & Santa Clara; intermodal with standard regional lines at relocated Jack London Square station at Broadway

#### Transbay Corridors (Oakland – San Francisco & Dumbarton)

High Speed Rail operates in new 4 track rail tunnel shared with BART between Oakland and San Francisco; intermodal with existing BART lines at 12th Street in Oakland and intermodal with standard regional services and new BART transbay line at Broadway in Oakland

Construct 4th BART track through Oakland; split Bay Point service and extend to Jack London Square, Alameda and San Francisco via new tube and new San Francisco subway line; new BART transbay line has intermodal with standard regional services at Broadway in Oakland and with Transbay Transit Center in San Francisco; existing BART lines have intermodal with HSR at 12th Street in Oakland

Dumbarton service operates with lightweight electric on separate trackage through Centerville between Peninsula and East Bay; new mid-level bridge constructed across bay

# Central Valley (Sacramento - Fresno)

High Speed Rail operates along BNSF Merced to Fresno and along UPRR from Merced to Sacramento; regional overlay service provided Merced to Sacramento connecting with new regional line through Tri-Valley near Manteca

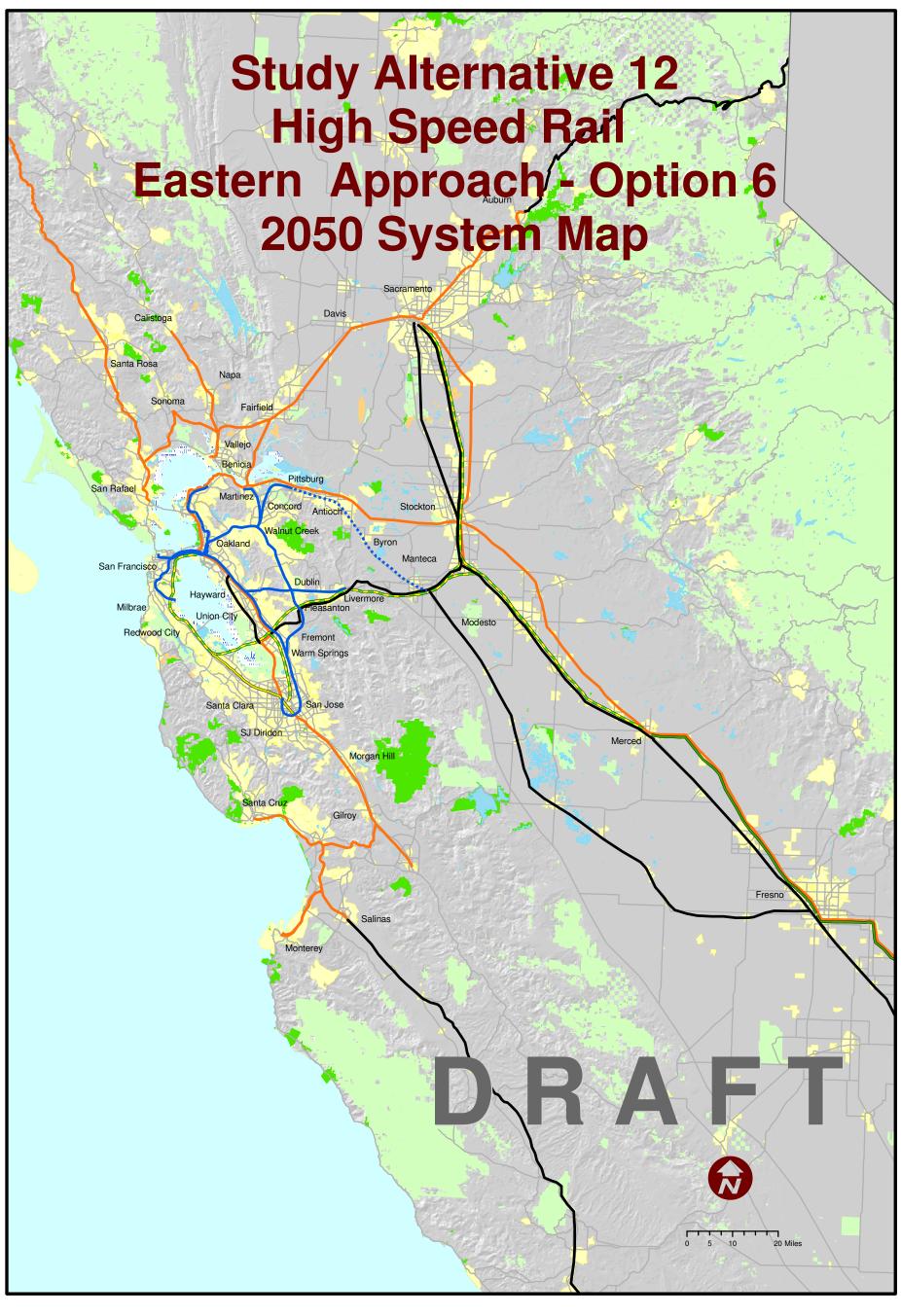
# <u>Tri-Valley Corridor (I-580, I-680 & I-205 from East Bay to Tracy/Manteca)</u>

High Speed Rail with regional overlay service operates in new tunnel through Niles Canyon and in shared corridor with the UPRR through Pleasanton and Livermore and connects via new alignment over the Altamont Pass to Central Valley lines; Greenville Road intermodal with BART

Extend BART system along I-580 to intermodal at Greenville Road with new stop at Isabel

# <u>I-680 Corridor (Fairfield – San Jose & Tracy)</u>

Extend eBART service to connect with regional service at Tracy



Conservation Areas

- HSR only, light weight equipment, double track, fully grade separated
- Regional Passenger Rail, light weight, fully grade separated
- HSR with Regional Passenger Rail
- Freight/Regional Rail
- Predominantly freight, standard equipment
- BART